RCRA SAMPLING QA PROJECT PLAN
AES GUAYAMA

Guayama, Puerto Rico

Responsible Agency:	U.S. Environmental Protection Agency Monitoring and Assessment Branch
Requesting Agency:	U.S. Environmental Protection Agency RCRA Compliance Branch
Project Officer:	Robert A. Morrell Robert Morrell, Geologist Monitoring Operations Section
Quality Assurance Officer:	Randy Braun 3/1/12 Randy Braun, Chief Monitoring Operations Section
Laboratory Coordinator:	J. R. Thurman for Peter Kariher Peter Kariher, Chemist USEPA-RTP

1. **Project Name**: RCRA Sampling Investigation
   AES Guayama

2. **Project Requested By**: Leonard Grossman, Enforcement Officer
   RCRA Senior Enforcement Team

3. **Date of Request**: February 3, 2012

4. **Date of Project Initiation**: February 21, 2012

5. **Project Officer**: Robert Morrell, Geologist
   Monitoring Operations Section

6. **Quality Assurance Officer**: Randy Braun, Chief
   Monitoring Operations Section

7. **Project Description**:

   a. Introduction and Site Background: AES Guayama is a coal-fired electrical power plant located on Route 3 in Guayama, Puerto Rico. During the combustion of coal, fly ash and bottom ash are generated. Agremax has been contracted by AES Guayama to explore beneficial uses for the coal combustion products. Fly ash and bottom ash are mixed with water to produce a manufactured aggregate, which gains strength with time, similar to cement. After curing, the manufactured aggregate is crushed to gravel-size. Agremax intends to use the manufactured aggregate for applications such as road beds, soil amendments, asphalt, and concrete. EPA is currently developing a Leaching Environmental Assessment Framework (LEAF), which consists of four leaching methods that are designed to characterize materials intended for beneficial reuse. A representative sample of the manufactured aggregate was requested by the RCRA Compliance Branch to assist in the development of the four proposed leaching methods.

   b. Objective and Scope of Work: The purpose of this sampling survey is to collect a representative composite sample from piles of the manufactured aggregate that are being stored on the AES Guayama facility. This sample will be used to develop leaching methods that can be used to characterize materials such as coal combustion products. The analytical results will provide a leaching assessment of the TCLP metals.

8. **Tentative Schedule of Tasks and Products**:

Project Assigned:	February 3, 2012
Development of QAPP:	February 29, 2012
QAPP Submitted for Approval:	March 1, 2012
Equipment Preparation:	March 2, 2012

Field Work:	March 13, 2012
Sample Chain-of-Custody Relinquished to Lab:	March 14, 2012
Laboratory Report Completed:	April 16, 2012
Final Report Completed:	May 16, 2012

9. **Project Organization and Responsibility**:

The following is a list of key project personnel and their corresponding responsibilities for samples analyzed at the U.S. EPA RTP Laboratory:

Robert Morrell.....Sampling Operations
Randy Braun.....Sampling QC
Peter Kariher.....Laboratory Sample Coordinator
Peter Kariher.....Data Processing
Randy Braun.....Quality Assurance Officer
Robert Morrell.....Overall Project Coordinator

10. **Data Quality Requirements**:

For samples analyzed by the U.S. EPA RTP Laboratory, the data must, at a minimum, conform to the Laboratory QA/QC Plans, as prepared by the RTP Laboratory.

Sample Representativeness: Sample containers, sampling equipment, sample collection techniques, and chain of custody procedures will conform with standard EPA Region 2 protocol.

All precleaned sample containers and glassware for chemical analysis will be provided by Environmental Sampling Supply (ESS). Quality assurance documentation of sample container cleanliness will be provided by ESS, if requested.

11. **Sampling Procedures**:

A polypropylene scoop will be used to collect a composite sample of the piles of manufactured aggregate being stored on the AES Guayama facility. The composite sample will be mixed in a 5-gallon plastic bucket. After mixing, the material will be transferred to 2-liter plastic jars. The composite sample will be analyzed for TCLP metals using the four methods outlined in LEAF.

The methods employed will follow DESA sampling protocols and the equipment will be constructed of inert materials to prevent contamination. If any deviations from established procedures are used, they will be documented in the field notebook. All samples will be analyzed at the U.S. EPA RTP Laboratory in Durham, North Carolina.

12. **Calibration Procedures and Preventative Maintenance**:

    a. Field Equipment: All field equipment will be prepared and calibrated prior to the sampling survey using instruction manuals provided with the equipment.

    b. Laboratory Equipment: Laboratory instrumentation is calibrated to meet method-specified tuning and/or calibration criteria and maintained in accordance with the manufacturer's specifications and EPA QA/QC procedures.

13. **Documentation, Data Reduction, and Reporting**:

    a. Documentation: All written notes and sample logs will be recorded in a bound field notebook. Chain of Custody / Field Data Forms and sample labels will be prepared by field personnel and given to the laboratory with the samples. The Monitoring and Assessment Branch will retain all field notes and photographs. The RTP Laboratory will maintain QA/QC records.

    b. Data Reduction and Reporting: Data will be reported by the EPA RTP laboratory in LIMS designated units.

14. **Data Validation**:

    Data will be validated by the procedures outlined in the SOP's prepared by the EPA RTP Laboratory.

15. **Performance and System Audits**:

    System audits are conducted on a continual basis at the EPA RTP laboratory.

16. **Laboratory and Field Corrective Action**:

    Appropriate methods are followed to detect and correct problems, e.g. audits and equipment blanks. Any biological and chemical tests that do not adhere to analytical QA/QC criteria will be retested and reanalyzed. If certain criteria are still exceeded in second testing, then appropriate qualifiers will be added.

17. **Reports**:

    Upon receipt of QA/QC validated data from the EPA RTP laboratory, a written report will be drafted for review and finalized for signature within 30 working days. The report will be sent to the RCRA Compliance Branch.

PARAMETER TABLE

Parameter	Number of Samples	Sample Matrix	Analytical Method	Holding Time	Container/ Preservative
TCLP Metals	1	Aggregate	1313 1314 1315 1316	6 months	20 2-liter plastic jars

The number of samples does not include QA equipment blanks or duplicate samples.